

West Nile Virus Surveillance and Response at West Valley Mosquito and Vector Control District



**Min-Lee Cheng, Ph.D.
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West Valley Mosquito and Vector Control District

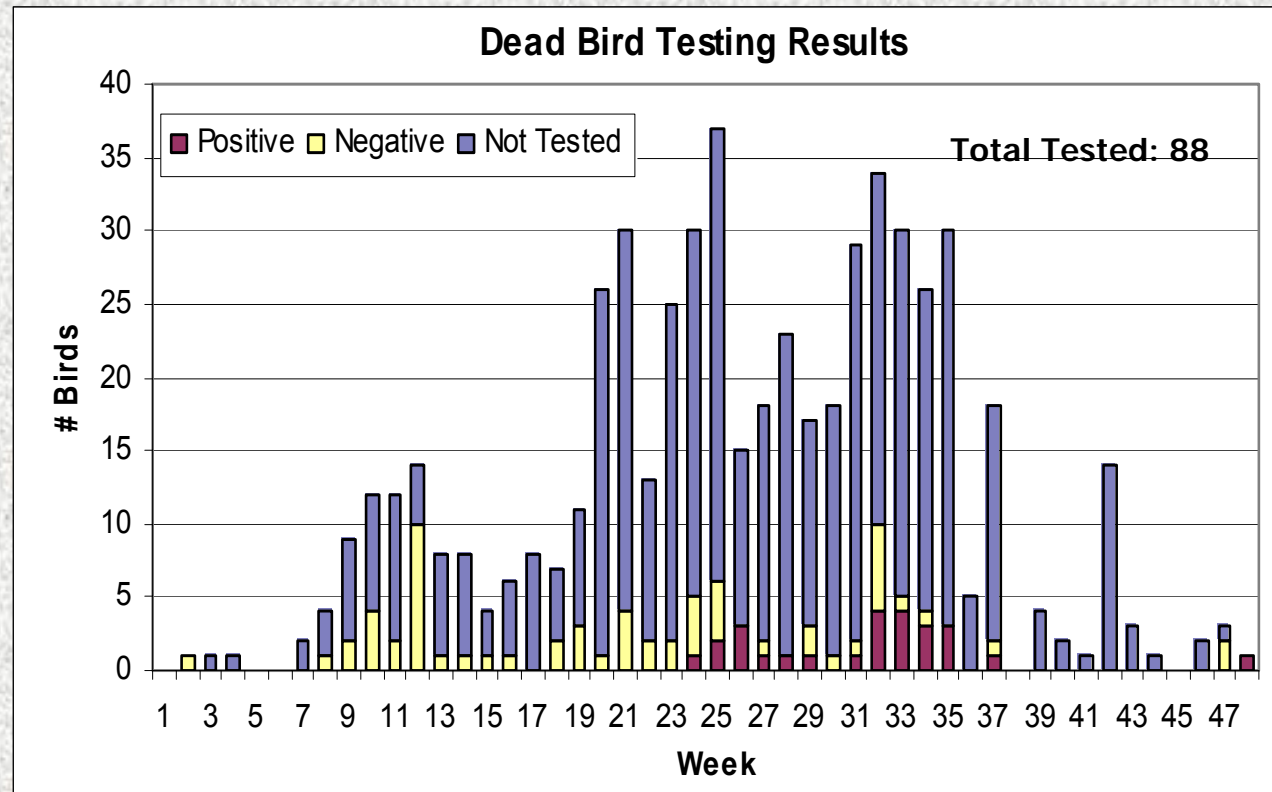
1295 E. Locust St., Ontario, CA 91761

Outline

- **Summary of WNV and mosquito surveillance in 2005;**
- **Intensified larval sources inspection, reduction and treatment;**
- **Public notification of WNV detection;**
- **Public notification and ULV application;**
- **Public outreach to increase awareness of impact of WNV and mosquitoes;**
- **Public reactions to mosquito control measures;**
- **Issues and challenges faced in 2005;**
- **Solutions for Issues and challenges for 2006.**

Infection in Dead Birds (Risk Value: 5)

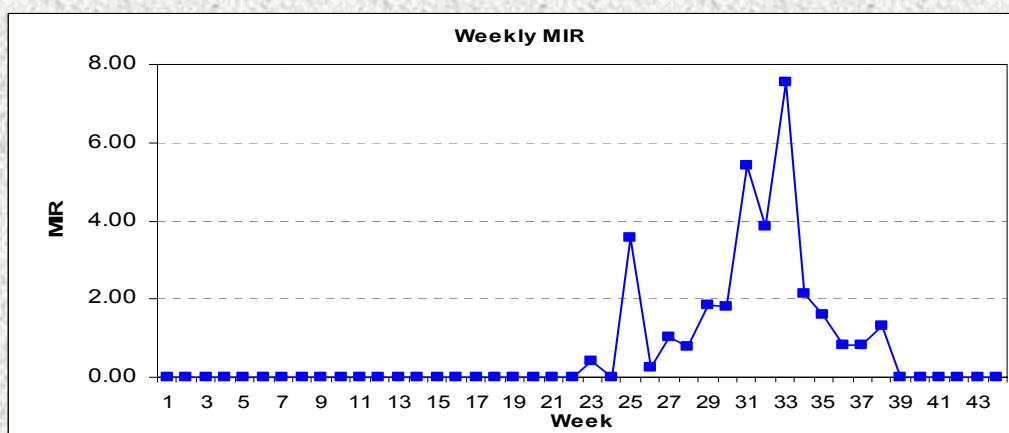
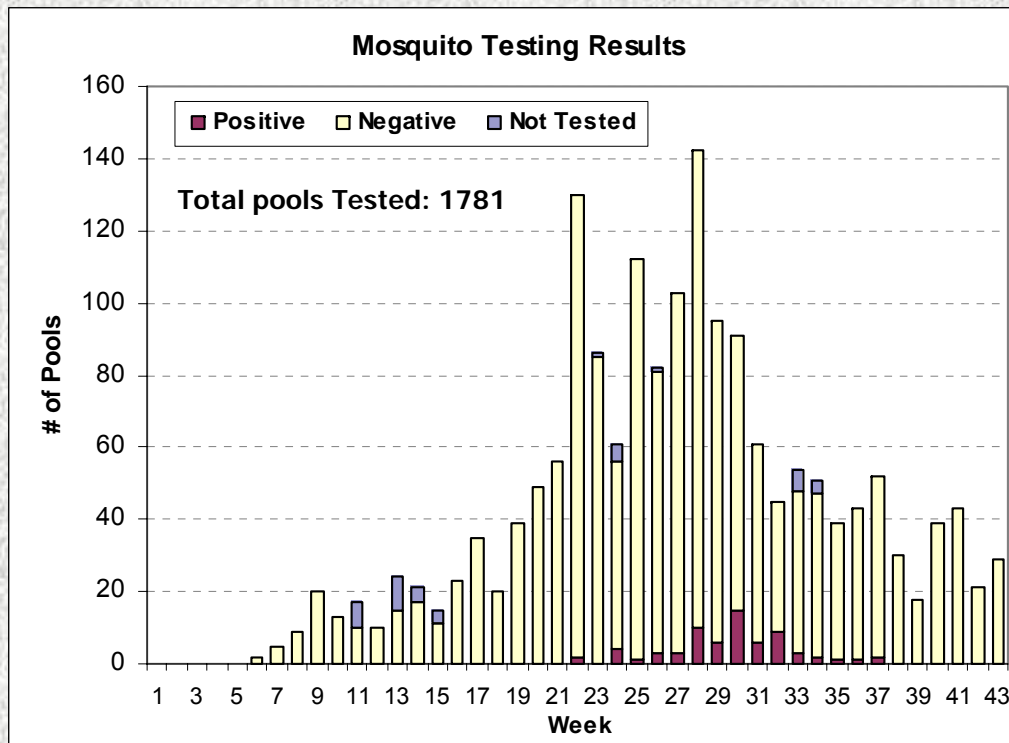
Week	
23	
24	1
25	2
26	3
27	1
28	1
29	1
30	
31	1
32	4
33	4
34	3
35	3
36	
37	1
38	
...	...
48	1
Total	26



Dead Bird

Infection in Mosquitoes (Risk Value: 5)

Week	
23	2
24	
25	4
26	1
27	3
28	3
29	10
30	6
31	15
32	6
33	9
34	3
35	2
36	1
37	1
38	2
Total	68



Sentinel Chicken Sero-conversion (Risk Value: 5)

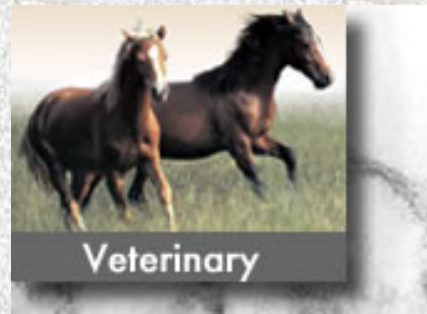
Week	
7	1
24	
25	
26	
27	5
28	
29	1
30	
31	
32	
33	3
34	
35	9
36	
37	
38	
Total	19

7 of 8 Coops (19 out of 32 chickens)
sero-converted

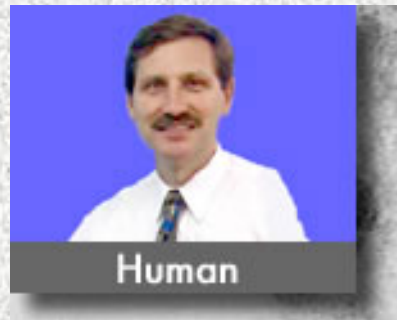


Week		
23		
24		
25		
26		
27		
28		
29		
30		
31		1
32	2	1
33		
34		1
35		
36		2
37		1
38		
Total	2	6

Equine and Human Cases

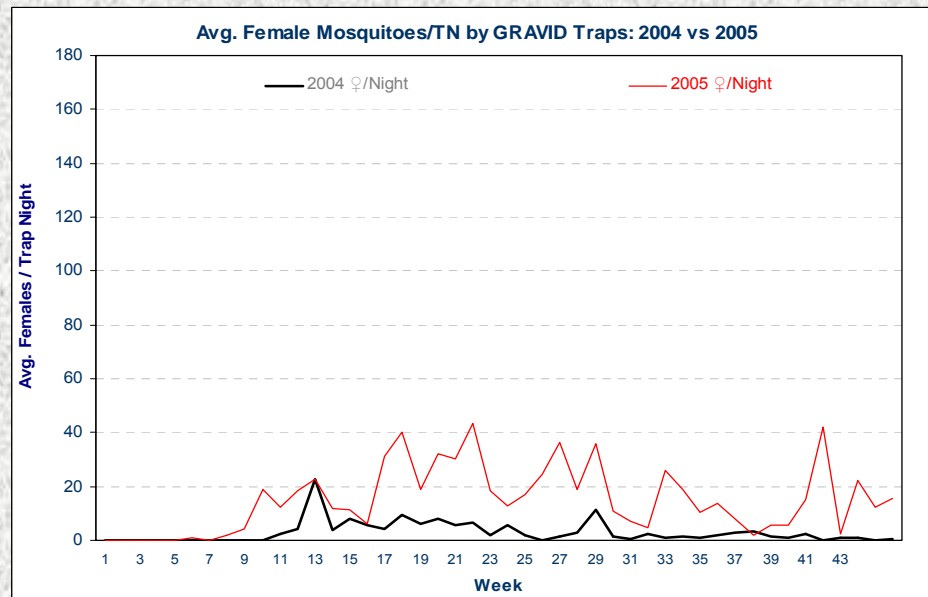
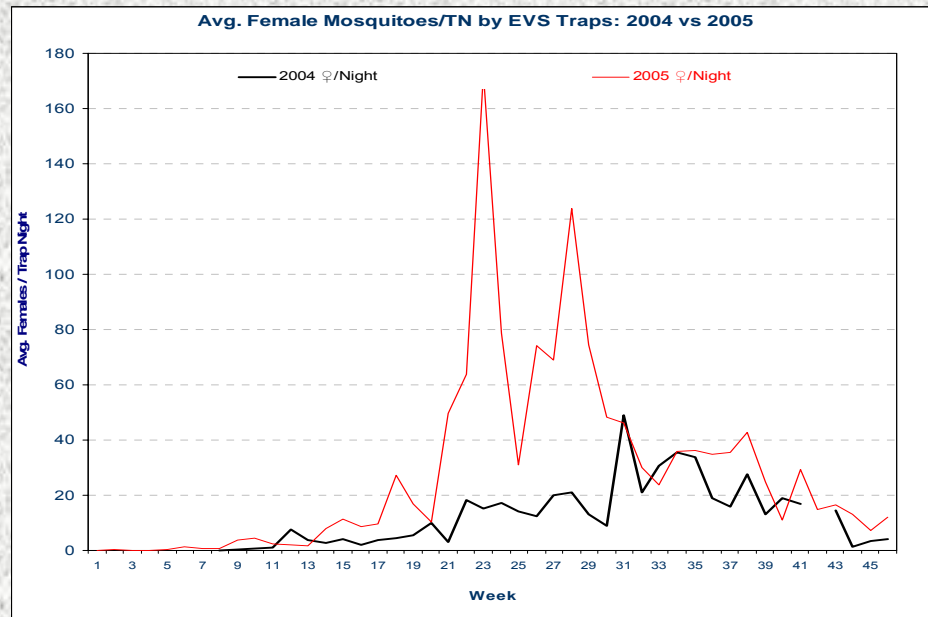


Risk Value : 4



Risk Value : 5

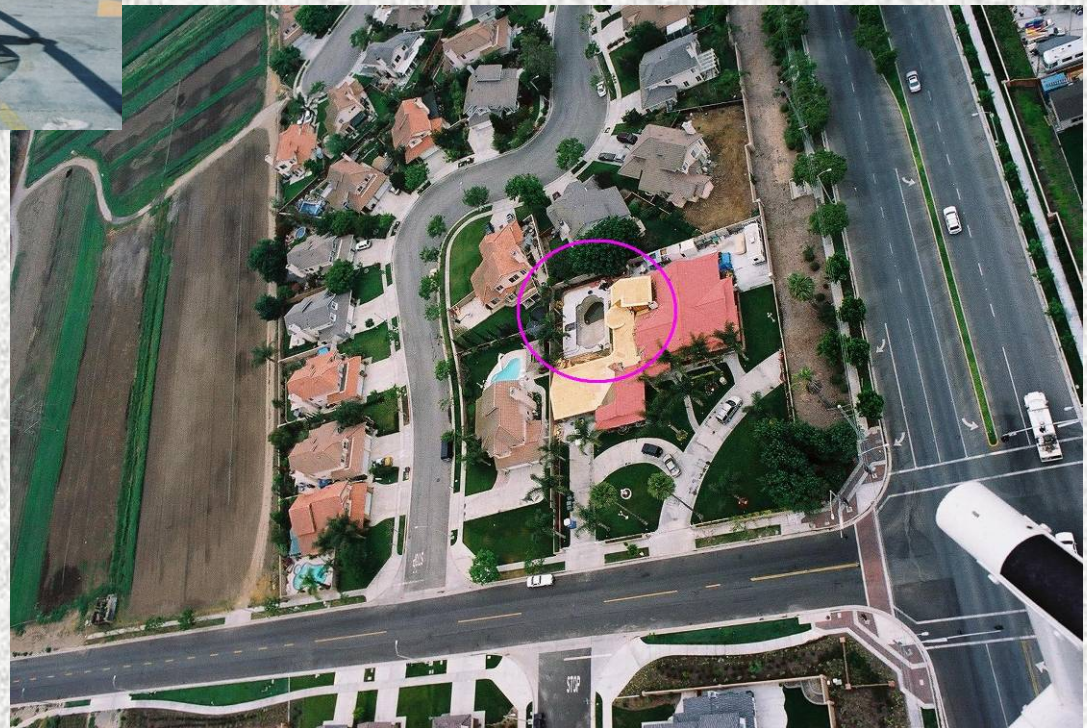
Adult Mosquito Surveillance



Intensified Ground-sweeping Inspection for Larval Source Reduction and Treatment



Aerial Surveillance for "Green Pools"



Public Notification

PUBLIC NOTICE

GROUND ULTRA LOW VOLUME APPLICATION OF PESTICIDE TO CONTROL ADULT MOSQUITOES

Time: August 18 – September 8, 2005 between midnight & 6:00am
Pesticide: Pyrethrin 25-5
Covered Areas: S. of 60 fwy, E. of S. Campus Ave, N. of Vineyard Dr. in the City of Chino

The active ingredient in Pyrethrin 25-5 is pyrethrin, a compound present in Chrysanthemum flower. The treatment will be confined within designated area. **Ponds with fish in the area should be covered.** Pyrethrin will leave no residue and will not damage property. Certain individuals may have allergic reactions similar to those of hay fever: itchy, watery eyes and runny nose. As a precaution, stay indoors, keep windows and doors closed, and keep pets indoors during pesticide application.

West Valley Mosquito and Vector Control District
 Tel. (909) 627 - 0931

MOSQUITOES
 Transmission of disease agents
 Human discomfort
 Property devaluation
 CALL 909-627-0931 for more information

Cable notification

West Valley Mosquito and Vector Control District
 13355 Elliot Avenue, Chino, CA 91710
 Telephone 909-627-0931 Fax 909-627-0553
 Website: www.wvmosquito.org

PRESS RELEASE

CONTACT: Min-Lee Cheng, Ph.D. District Manager
 Steven Su, Ph.D. Vector Ecologist

FOR IMMEDIATE RELEASE
 Monday, August 15, 2005

CHINO, California (August 15, 2005) – Mosquitoes carrying the West Nile virus are very active in one largely residential neighborhood in the city of Ontario. The adult mosquitoes and continual finding of WNV in mosquitoes and dead birds risk of WNV transmission to humans, which causes concern for officials at MVCD. Officials are targeting the area for ground fogging measures mosquitoes.

Fogging with a truck-mounted ultra low volume (ULV) sprayer will be conducted by District employees in the Ontario neighborhood between the freeway to the North, Riverside Drive to the South, Campus Ave to the West and the freeway to the East. Prior to fogging, abutting neighborhoods will be posted. Fogging activities may be postponed if inclement weather conditions are not conducive to fogging. If the desired control is not achieved.

The District plans to use the pesticide Pyrethrin for fogging. The active ingredient in Pyrethrin is pyrethrin, a compound present in Chrysanthemum flower. Pyrethrin is highly toxic to mosquitoes.

Press release



DISEASE WARNING

This disease is transmitted to humans & horses by the bite of infected mosquitoes.

Follow These Precautions:

AVOID ACTIVITY IN THIS AREA BETWEEN DUSK AND DAWN, WHEN MOSQUITOES ARE MOST ACTIVE.
APPLY MOSQUITO REPELLENT CONTAINING ACTIVE INGREDIENT DEET, PICARIDIN OR OIL OF LEMON EUCALYPTUS.
WEAR PROTECTIVE CLOTHING LOOSE, LIGHT COLORED, LONG SLEEVE SHIRTS AND PANTS.
MOSQUITO-PROOF YOUR HOME WITH TIGHT FITTING SCREENS ON WINDOWS AND DOORS.
ELIMINATE STANDING WATER AND PROPERLY MAINTAIN SWIMMING POOLS & SPAS TO AVOID MOSQUITO BREEDING.

ADVERTENCIA DE ENFERMEDAD

Esta enfermedad es transmitida a humanos & caballos por la mordedura de mosquitos/zancudos

Siga estas Precauciones

EVITE ACTIVIDADES EN ESTA AREA DURANTE TIEMPO CUANDO LOS ZANCUDOS ESTAN MAS ACTIVOS, EN LA AMANECER O AL ATARDECER.
APLIQUE INSECTO REPELENTE QUE CONTIENE EL QUIMICO DEET O PICARIDIN O PETROLEO DE EUCALIPTO DE LIMON PARA PREVENIR LAS MORDEDURAS DEL ZANCUDO.
PROTEJA SU CUERPO USE ROPA FLOJA, COLORES CLAROS CON MANGAS LARGAS Y PANTALONES LARGOS.
PROTEJA SU CASA CON QUEDAR APRETADO PANTALLAS EN VENTANAS Y PUERTAS.
ELIMINE AGUES ESTANCADAS ALREDEDOR DE SU PROPIEDAD Y MANTENE APROPIADAMENTE NADANDO PISCINAS & BALNEARIOS PARA EVITAR CREAR DE ZANCUDOS.

FOR FURTHER INFORMATION CONTACT:
 WEST VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT
 13355 ELLIOT AVENUE
 CHINO, CA 91710
 (909) 627-0931
 WWW.WVMOSQUITO.ORG

Disease Warning Sign

PUBLIC NOTICE

GROUND ULTRA LOW VOLUME APPLICATION OF PESTICIDE TO CONTROL ADULT MOSQUITOES

Time: Aug 18 - Sept 8, 2005 8pm - 12 midnight
Pesticide: Pyrethrin 25-5
Covered Areas: S. of 60 fwy, E. of Campus Ave, N. of Riverside & W. of Vineyard Dr.

The active ingredient in Pyrethrin 25-5 is pyrethrin, a compound present in Chrysanthemum flower. The treatment will be confined within designated area. **PONDS WITH FISH IN THE AREA SHOULD BE COVERED.** Pyrethrin will leave no residue and will not damage property. Certain individuals may have allergic reactions similar to those of hay fever: itchy, watery eyes and runny nose. As a precaution, stay indoors, keep windows and doors closed, and keep pets indoors during pesticide application.

El ingrediente activo en Pyrethrin 25-5 es piretrina, un compuesto presente en la flor del Crisantemo. El tratamiento se limitará dentro de área designada. **Las CHARCAS CON PEZ EN EL AREA SE DEBEN CUBRIR.** Piretrina no dejará residuo y no dañará la propiedad. Ciertos individuos pueden tener las reacciones alérgicas semejantes a los de la fiebre heno: ojos picantes y agua y nariz líquida. Como una precaución, permanezca dentro de su casa, mantenga ventanas y puertas cerradas, y mantenga animales domésticos dentro durante aplicación.

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Public Notice for Fogging



Ground ULV Application

08/19/05

(Ended prematurely due to changing in wind conditions)

% Mortality of sentinel adult mosquitoes (# Deaths / Total)			
Time post- treatment	45 min	2 hours	8.25 hours
Treatment Area	31.2 (156/500)	44.0 (220/500)	49.4 (247/500)
Control Area	2.5 (4/162)	3.1 (5/162)	4.9 (8/162)

08/24/05

% Mortality of adults (No. dead/No. introduced)			
Time post- treatment	45 min	10 hours	14 hours
Treatment Area	92.5 (418/452)	97.6 (441/452)	99.6 (450/452)
Control Area	0 (0/77)	15.6 (12/77)	22.0 (17/77)

Adult mosquito counts / TN (Avg. +/- SE)	
Day before treatment	14.1 +/- 4.1
Day after treatment	4.9 +/- 3.0

Public Outreach

Increase public awareness of WNV

- Local Fair Events
- WNV Brochures
- Press Releases
- Multi-agency WNV Campaign
- Presentations
- Town Hall Meeting
- Media Campaign
- Distribution of DEET packets to Senior Centers and at Community Fairs



Public Reactions to Mosquito Control Measures

- Appreciation of District's effort to control mosquitoes and the spread of WNV;
- Desire to be informed and educated regarding mosquitoes, mosquito-borne diseases and mosquito control;
- Aerial surveillance for "green pools"- **from "Resistance" to "Invitation"**
- Complaint of inadequate time of adulticiding notification;
- Request of door-to-door delivery of adulticiding notices;
- Over-reaction to safety and environmental concerns on pesticide application.

Issues and Challenges Faced in 2005

- Lengthy TNT for sentinel chicken serum test results;
- Puzzling confirmation of positive mosquito pools;
- Delayed notification of human cases;
- Delayed and incorrect report of surveillance data;
- Over-stretched resources during peak season;
- Capricious weather conditions for ULV;
- Public's misunderstanding of mosquito control operations and inadequate cooperation.

More challenges ahead of us: BMPs



Solutions for Issues and Challenges for 2006

- Earlier and intensified inspection, reduction and treatment of larval sources;
- If adulticiding becomes necessary due to undesirably high adult populations and detection of WNV, contracted delivery service will be hired for door-to-door adulticiding notice delivery;
- Enhancement of public awareness of mosquitoes and WNV;
- More efficient coordination among DHS, CVEC and local agencies;
- Better prepared for coming season using the state WNV fund to train and retain additional qualified personnel, purchase new equipment and insure no shortage of control products.